CLAIMS

We claim:

1. A cDNA encoding a constitutively active, non-endogenous version, of a human $5HT_{2C}$ serotonin receptor comprising SEQ. ID NO. 28.

2. A constitutively active non-endogenous human $5HT_{2C}$ serotonin receptor encoded by the cDNA of SEQ ID NO. 28 comprising SEQ ID NO. 29.

3. A cDNA encoding a constitutively active, non-endogenous version, of a human $5HT_{2A}$ serotonin receptor comprising SEQ. ID NO. 30.

4. A constitutively active non-endogenous human $5HT_{2A}$ serotonin receptor encoded by the cDNA of SEQ ID NO. 30 comprising SEQ ID NO. 31.

5. A cDNA encoding a constitutively active, non-endogenous version, of a human $5HT_{2A}$ serotonin receptor comprising SEQ. ID NO. 32.

6. A constitutively active non-endogenous human $5HT_{2A}$ serotonin receptor encoded by the cDNA of SEQ ID NO. 32 comprising SEQ ID NO. 33.

7. A method for identifying whether a candidate compound is an inverse agonist to a non-endogenous human $5HT_2$ serotonin receptor comprising the steps of:
   a. contacting the candidate compound with a non-endogenous human $5HT_2$ serotonin receptor ; and
   b. determining, by measurement of a second messenger response whether said compound is an inverse agonist.

8. The method of claim 7 in which the non-endogenous human 5HT2 serotonin receptor comprises SEQ ID NO. 29.

9. The method of claim 7 in which the non-endogenous human 5HT2 serotonin receptor comprises SEQ ID NO. 31.

10. The method of claim 7 in which the non-endogenous human 5HT2 serotonin receptor comprises SEQ ID NO. 33.

11. An inverse agonist identified by the method of claim 7.

12. A reagent for screening compounds to determine whether the compounds are inverse agonists at human $5HT_2$ serotonin receptors comprising a membrane fraction from mammalian cells transfected with and expressing a cDNA encoding for a constitutively active, non-endogenous version, of a human $5HT_2$ serotonin receptor

in which the constitutively active non-endogenous human $5HT_2$ receptor is expressed on the cell surface.

13. A reagent for screening compounds to determine whether the compounds are inverse agonists at human $5HT_2$ serotonin receptors comprising mammalian cells which produce a second messenger response, transfected with and expressing a cDNA encoding for a constitutively active, non-endogenous version, of a human $5HT_2$ serotonin receptor in which the constitutively active non-endogenous human $5HT_2$ receptor is expressed on the cell surface.